REMARKS

DISCUSSION OF SPECIFICATION

The CROSS-REFERENCE TO RELATED APPLICATIONS has been amended to include the missing serial number. In the paragraph that begins on page 7, line 6, a typographical error was corrected. In particular, on line 16 of the paragraph, "the patient" has been deleted. Acceptance of the amended specification is respectfully requested.

DISCUSSION OF CLAIMS

In the Office Action, claims 1, 15, and 16 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,330,507 to Schwartz.

In the Office Action, claims 2-6 are rejected under 35 U.S.C. §103(a) as being unpatentable U.S. Patent No. 5,330,507 to Schwartz.

In the Office Action, claims 7-14 are rejected under 35 U.S.C. §103(a) as being unpatentable U.S. Patent No. 5,330,507 to Schwartz in view of U.S. Patent No. 5,203,326 to Collins.

In response thereto, claim 1 has been cancelled, claims 2, 3, 5, 10, 15, and 16 have been amended, and new claims 17-22 have been added. Accordingly, claims 2-22 are now pending.

Independent Claim 3

Claim 3 recites a method comprising the steps of detecting whether a patient is prone to vagally-mediated arrhythmias, controlling a function of the cardiac stimulation device using a controller based on whether the patient is prone to vagally-mediated arrhythmias, and determining whether the patient is at rest and wherein the step of controlling the functions of the cardiac stimulation device using the controller is further based on whether the patient is at rest.

The Schwartz reference discloses stimulating the right or left vagus nerve with continuous and/or phasic electrical pulses. Automatic detection of the need for vagal stimulation is responsive to increases in the heart rate greater than a predetermined threshold, the occurrence of frequent or complex ventricular arrhythmias, and/or a change in the ST segment elevation greater than a predetermined or programmed threshold. Nowhere does the Schwartz reference disclose or suggest controlling the functions of the cardiac stimulation based on whether the patient is at rest. In the Schwartz reference, the apparatus does not distinguish whether the patient is at rest or non rest when detecting the need for vagal stimulation.

The Collins reference discloses a pacemaker that detects the occurrence of an abnormal condition of a patient's heart and, in response, delivers an antiarrhythmia therapy to the patient which includes two components: electrical stimulation of the heart and electrical stimulation of nerves or ganglia in the autonomic nervous system. According to the Collins reference, in the absence of an arrhythmia condition, the pacemaker monitors cardiac activity to detect arrhythmia precursors such as episodes of myocardial ischemia. When acute myocardial ischemia occurs, vagal activation tends to prevent fibrillation in a manner that is partly dependent on direct electrophysiological effects and largely secondary to the decrease in heart rate which results in the reduced oxygen consumption associated with ischemia. This protective effect of vagal stimulation follows from its ability to decrease heart rate. Therefore, upon detection of an arrhythmia precursor, the apparatus directs a therapy which prevents ventricular fibrillation by vagal stimulation during acute myocardial ischemia. Nowhere does the Collins disclose or suggest controlling the function of the cardiac stimulation based on whether the patient is at rest. In the Collins reference, the pacemaker does not distinguish whether the patient is at rest or non rest when detecting the need to provide antiarrhythmic therapy.

Accordingly, it is respectfully submitted that claim 3 is in condition for allowance.

Dependent Claims 2 and 4-14

Claims 2 and 4-14 depend from claim 3 and are similarly patentable. Accordingly, it is respectfully submitted that these claims are in condition for allowance.

Furthermore, claim 7 recites a method wherein selected functions include overdrive pacing and wherein a first set of parameters used for a patient prone to vagally-mediated arrhythmias while the patient is at rest provides generally more aggressive overdrive pacing than a second set of parameters used while the patient is not at rest. The Schwartz reference is directed to stimulating the vagus nerve and does not disclose or suggest overdrive pacing the heart. The Collins reference discloses overdrive pacing (see column 22, lines 1-8), but does not disclose or suggest overdrive pacing the heart more aggressively while the patient is at rest than while the patient is not at rest.

Independent Claim 15

Claim 15 recites an implantable cardiac stimulation device wherein selected functions include overdrive pacing and wherein a first set of parameters used for a patient prone to vagally-mediated arrhythmias while the patient is at rest provides a more aggressive overdrive pacing than a second set of parameters used while the patient is not at rest.

For at least the same reasons discussed above with regards to claim 7, it is respectfully submitted that claim 15 is in condition for allowance.

Dependent Claims 17-19

Claims 17-19 depend from claim 15 and are similarly patentable. Accordingly, it is respectfully submitted that these claims are in condition for allowance.

Independent Claim 16

Claim 16 recites an implantable cardiac stimulation device wherein a controller overdrive paces the heart more aggressively when the patient is prone to vagally-mediated arrhythmias than when the patient is not prone to vagally-mediated arrhythmias.

For at least the same reasons discussed above with regards to claim 7, it is respectfully submitted that claim 16 is in condition for allowance.

Dependent Claims 20-22

Claims 20-22 depend from claim 16 and are similarly patentable. Accordingly, it is respectfully submitted that these claims are in condition for allowance.

CONCLUSION

In light of the above claim amendments and remarks, it is respectfully submitted that the application is in condition for allowance, and an early notice of allowance is requested.

Respectfully submitted,

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Ronald S. Tamura, Reg. No. 43,179
Patent Attorney for Applicant

CUSTOMER NUMBER: 36802